

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/779,554	HULL, ANDREW J.	
	Examiner Rose M Miller	Art Unit 2856	XJ

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to papers filed 2/9/04.
2.  The allowed claim(s) is/are 1-11.
3.  The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
 of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)	6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>9/27/04</u>
3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____	7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment
4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9. <input type="checkbox"/> Other _____

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Kasischke on 27 September 2004.

2. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: Empty diagram boxes 18, 20, and 22, found in Figures 1 and 2, will be labeled with appropriate descriptive phrases in addition to the reference legends all ready present. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

3. The following is an examiner's statement of reasons for allowance: The prior art of record fails to teach and/or suggest a method to measure the complex frequency-dependent dilatational and shear wavenumbers of a material under test comprising, in combination with the other recited steps, subjecting the material to a compressional load, vibrating the material in a vertical direction at a range of test frequencies, vibrating the material in a horizontal direction at the range of test frequencies, obtaining a dilatational wavenumber utilizing measurement of motion obtained while vibrating the material in a vertical direction, obtaining a shear wavenumber utilizing measurements of motion obtained while vibrating the material in the horizontal direction, and calculating material parameters from known material properties and a selected one of shear wavenumber, dilatational wavenumber, and both wavenumbers at each test frequency.

While the prior art does teach testing a material after applying a load to the material, even a compressional load, the prior art does not teach vibrating the material first in a vertical direction and then in a horizontal direction while under the compressional load, especially not to determine the dilatational wavenumber. The prior art of record utilizes either a rotational or torsional vibration of the test material, a clamp

at one end of the material to form a cantilever such that the material vibrates at a resonant frequency, or an acoustic transducer to produce broadband vibrations within the test material. There is no teaching or suggestion of teaching to combine the compressional load with a step of vibrating the material in the vertical direction and then separately vibrating the material in the horizontal direction.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Key, Jr. et al. (US 3,842,662)** discloses a pressure release test device.

**Douglas (US 3,903,734)** discloses a technique for measuring the complex shear modulus utilizing laser interferometry.

**Pringiers et al. (US 4,383,450)** discloses a method and apparatus for determining static and dynamic characteristics from a viscous-elastic material.

**Russenberger (US 4,445,381)** discloses a device for testing the vibration strength of a test body.

**Lau et al. (US 5,060,516)** discloses a method and apparatus for non-destructive testing the quality of manufacturing wood panels.

**Gibson et al. (US 5,269,181)** discloses an apparatus and process for measuring the mechanical properties of fibers.

**Owen et al. (US 6,023,980)** discloses a high-cycle fatigue test machine.

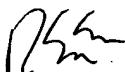
**Hull (US 2002/0129660 A1)** discloses a nonresonant technique for estimation of the mechanical properties of viscoelastic materials.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Thursday, 7:00 am to 5:30 pm.

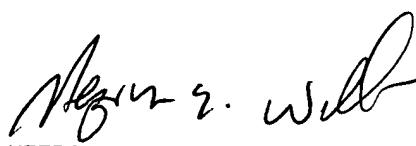
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RMM

27 September 2004



Hezron Williams  
HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800